



801 Louisiana, Ste.200  
Houston, Texas 77002

Redacted

August 22, 2011

Pacific Gas and Electric Company  
350 N. Wiget  
Walnut Creek, CA 94598  
Attention: Redacted

Test Contractor: Milbar hydro-test inc -- FY12-112  
Asset Owner: Pacific Gas and Electric Company -- 414197334-T81  
Construction Contractor: Snelson -- 41474005 -T81  
Test Section: PG&E T-81 L-300B, MP 256.66 - 257.5096  
Test Date: August 22, 2011  
Certificate Number: RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C

To whom it may concern,

This letter is to certify that the hydrostatic test performed on pipe owned by Pacific Gas and Electric Company and tested by Milbar hydro-test inc met the requirements of the Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1).

The test segment was subjected to a spike pressure test of 1042 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 8.42 hour test duration period.

This hydrostatic test was completed successfully. Pressure was maintained on the test facilities in excess of 8.42 continuous hours without evidence of a leak failure. Water was the test medium. At the highest elevation point in the test section, the calculated test pressure was 961 psig and the established MAOP is 874 psig.

Pressure decreased 68 psi during the test. 9,715.20 ounces of fluid was intentionally released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 1,864.91 ounces, loss, which is equivalent to a 0.54 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.

Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.

Sincerely,

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Letter



### Hydrostatic Test Certification

Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005-T81
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

#### Hydrostatic Test Pressure

APPLICABLE CODE FOR CERTIFICATION:	Test Date:	22-Aug-11
Code of Federal Regulations, Title 49, Part 192, Subpart J (Class 1)		

This is to certify that the pipeline or pipeline section(s) described below was hydrostatically pressure tested in accordance with the following procedure:

Pipeline:	PG&E T-81 L-300B, MP 256.66 - 257.5096		
From:	45+64	To:	0+00

#### Pipe Data

Segment	Length	Diameter	Wall Thickness	Specification	100% SMYS
1	26 ft	34.000 in.	0.505 in.	API5L-X60, DSAW, Arc Weld, Steel	1,782 psi
2	52 ft	34.000 in.	0.375 in.	API5L-X65, DSAW, Arc Weld, Steel	1,434 psi
3	4,510 ft	34.000 in.	0.344 in.	API5L-X52, DSAW, Arc Weld, Steel	1,052 psi
4	6 ft	34.000 in.	0.375 in.	API5L-X52, DSAW, Arc Weld, Steel	1,147 psi
5	48 ft	34.000 in.	0.438 in.	API5L-X48, DSAW, Arc Weld, Steel	1,235 psi
6	40 ft	34.000 in.	0.500 in.	API5L-X65, DSAW, Arc Weld, Steel	1,912 psi

#### Initial Test Conditions

Pressure at Test Point:	1,042 psig	Date/Time:	8/22/11 9:35 AM	Pipe Temperature	
Ambient Temperature:	78.0 °F	Elevation @ Test Point:	420.0 ft	Unrestrained:	81.0 °F
Pressure @ High Point (Cal/Measure):	1,030 psig	Elevation @ High Point:	448.0 ft	Restrained:	83.0 °F
Pressure @ Low Point (Cal/Measure):	1,042 psig	Elevation @ Low Point:	420.0 ft	Location:	45+64
				Location:	0+00
				Location:	45+64

#### Final Test Conditions

Pressure at Test Point:	974 psig	Date/Time:	8/22/11 6:00 PM	Pipe Temperature	
Ambient Temperature:	90.0 °F	Elevation @ Test Point:	420.0 ft	Unrestrained:	86.0 °F
Pressure @ High Point (Cal/Measure):	962 psig	Elevation @ High Point:	448.0 ft	Restrained:	83.0 °F
Pressure @ Low Point (Cal/Measure):	974 psig	Elevation @ Low Point:	420.0 ft	Location:	45+64
				Location:	0+00
				Location:	45+64

Total Fluid Injected:		Volume loss	
Total Fluid Withdrawn:	9715.20 fluid ounces		
Net Change in Volume of the Test Section ± (+ Gain, - Loss):	(1,864.91) oz	loss	(0.0069)% (0.536) °F equivalent

Test Duration: 8.42 hours

Minimum Test Pressure:	974 psig	962 psig	974 psig	
Maximum Test Pressure:	1,042 psig	1,030 psig	1,042 psig	
% SMYS:		83.4%	99.0%	
Test Segment Observed % SMYS:	Minimum	54.5%	Maximum	99.0%

Minimum Test Pressure (Calculated/Measured): 962 psig

Maximum Allowable Operating Pressure: DOT Part 192 Test Factor= 1.10 874 psig

Were leaks observed?	No	Explain:
Acceptable Hydrostatic Test?	Yes	<p>The test segment was subjected to a spike pressure test of 1042 psig for 30 minutes, without observed leakage or yielding of the pipe segment. The 30 minute spike test and subsequent pressure reduction with volume bleed was included and is part of the 8.42 hour test duration period.</p> <p>No leaks were observed during the test period. The test section included 4,564 feet of buried and 118 feet of exposed pipe. Pressure lost 68 psi during the test. The buried pipe segment fluid temperature remained steady and the exposed pipe segment gained 5°F.</p> <p>9,715.20 ounces of fluid was intentionally released from the test section. Net corrected volumetric change from beginning of the test to the end of the test is calculated to be 1,864.91 ounces, loss, which is equivalent to a 0.54 °F change in pipe temperature and within the error attributed to the temperature measurement instrumentation utilized.</p> <p>Test pressure did not remain steady even though no leaks were observed. The volumetric loss is attributed to the error characteristic of the temperature measurement instrumentation utilized.</p>

Remarks

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# Dead Weight Log Sheet

Owner Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005 -T81
Testing Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Date 22-Aug-11

## Test Log

Log No.	Test Period		Test Pressure	Temperature °F			Remarks		
	Date	Time		Ambient	Pipe		Comment	Bleed	Inject
					Unrestrained	Restrained			
1	8/22/11	9:10 AM	782 psig	75 °F	80 °F	83 °F	Start Spike		
2	8/22/11	9:11 AM	792 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
3	8/22/11	9:12 AM	802 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
4	8/22/11	9:13 AM	812 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
5	8/22/11	9:14 AM	822 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
6	8/22/11	9:15 AM	832 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
7	8/22/11	9:16 AM	842 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
8	8/22/11	9:17 AM	852 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
9	8/22/11	9:18 AM	862 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
10	8/22/11	9:19 AM	872 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
11	8/22/11	9:20 AM	882 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
12	8/22/11	9:21 AM	892 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
13	8/22/11	9:22 AM	902 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
14	8/22/11	9:23 AM	912 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
15	8/22/11	9:24 AM	922 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
16	8/22/11	9:25 AM	932 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
17	8/22/11	9:26 AM	942 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
18	8/22/11	9:27 AM	952 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
19	8/22/11	9:28 AM	962 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
20	8/22/11	9:29 AM	972 psig	75 °F	80 °F	83 °F	Inject		1,833 oz.
21	8/22/11	9:30 AM	982 psig	75 °F	80 °F	83 °F	Inject		1,692 oz.
22	8/22/11	9:31 AM	992 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
23	8/22/11	9:32 AM	1,002 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
24	8/22/11	9:33 AM	1,012 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
25	8/22/11	9:34 AM	1,022 psig	75 °F	80 °F	83 °F	Inject		1,763 oz.
26	8/22/11	9:34 AM	1,032 psig	76 °F	80 °F	83 °F	Inject		1,763 oz.
27	8/22/11	9:34 AM	1,042 psig	77 °F	80 °F	83 °F	Inject		1,763 oz.
28	8/22/11	9:35 AM	1,042 psig	78 °F	81 °F	83 °F	On Test		
29	8/22/11	9:45 AM	1,041 psig	79 °F	82 °F	83 °F			
30	8/22/11	9:55 AM	1,041 psig	80 °F	83 °F	83 °F			
31	8/22/11	10:05 AM	1,041 psig	82 °F	83 °F	83 °F	End Spike		
32	8/22/11	10:06 AM	1,031 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
33	8/22/11	10:07 AM	1,021 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
34	8/22/11	10:08 AM	1,011 psig	82 °F	83 °F	83 °F	Bleed	1,472 oz.	
35	8/22/11	10:09 AM	1,001 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
36	8/22/11	10:10 AM	991 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
37	8/22/11	10:11 AM	981 psig	82 °F	84 °F	83 °F	Bleed	1,472 oz.	
38	8/22/11	10:12 AM	975 psig	82 °F	84 °F	83 °F	Bleed	883 oz.	
39	8/22/11	10:25 AM	975 psig	83 °F	84 °F	83 °F			
40	8/22/11	10:30 AM	975 psig	85 °F	83 °F	83 °F			
41	8/22/11	10:45 AM	975 psig	86 °F	85 °F	83 °F	Warm		
42	8/22/11	11:00 AM	974 psig	86 °F	85 °F	83 °F			
43	8/22/11	11:15 AM	974 psig	86 °F	85 °F	83 °F			

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## Pipe Segment Volume Calculations

Company	Pacific Gas and Electric Company	Job Number	414197334-T81
Construction Co.	Snelson	Job Number	41474005 -T81
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096	WATER	
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		

Description	Segment					
	1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.344 in.	0.375 in.	0.438 in.	0.500 in.
Inside Diameter	32.990 in.	33.250 in.	33.312 in.	33.250 in.	33.125 in.	33.000 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-X48	API5L-X65
Length Unrestrained	26 ft	52 ft				40 ft
Length Restrained			4.510 ft	6 ft	48 ft	
Temperature - On Test	81 °F	81 °F	83.0 °F	83.0 °F	83.0 °F	81.0 °F
Temperature - End of Test	86 °F	86 °F	83.0 °F	83.0 °F	83.0 °F	86.0 °F
Pressure - On Test	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig	1,042 psig
Pressure - End of Test	974 psig	974 psig	974 psig	974 psig	974 psig	974 psig

Unrestrained Pipe						
Sum:	Vo	5,277.31 gal 675,495 oz.		Vtp1	5,300.10 gal 678,412 oz.	
Vo Unrestrained	1,155 gal	2,346 gal			1,777 gal	
Fwp 1	1.003193	1.003193			1.003193	
Fpp 1	1.002836	1.003850			1.002866	
Fpt 1	1.000382	1.000382			1.000382	
Fwt 1	1.002556	1.002556			1.002556	
Fpwt 1 = Fpt/Fwt	0.997832	0.997832			0.997832	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,158.96 gal	2,356.98 gal			1,784.15 gal	
Fwp 2	1.002984	1.002984			1.002984	
Fpp 2	1.002651	1.003598			1.002679	
Fpt 2	1.000473	1.000473			1.000473	
Fwt 2	1.003373	1.003373			1.003373	
Fpwt = Fpt/Fwt	0.997110	0.997110			0.997110	
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,157.67 gal	2,354.20 gal			1,782.16 gal	

Restrained Pipe						
Sum:	Vo	206,610.76 gal 26,446,177 oz.		Vtp1	207,383.63 gal 26,545,105 oz.	
Vo Unrestrained			204,191 gal	271 gal	2,149 gal	
Fwp 1			1.003193	1.003193	1.003193	
Fpp 1			1.003144	1.002885	1.002476	
Fpt 1			1.000278	1.000278	1.000278	
Fwt 1			1.002868	1.002868	1.002868	
Fpwt 1 = Fpt/Fwt			0.997417	0.997417	0.997417	
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			204,957 gal	272 gal	2,155 gal	
Fwp 2			1.002984	1.002984	1.002984	
Fpp 2			1.002944	1.002702	1.002320	
Fpt 2			1.000278	1.000278	1.000278	
Fwt 2			1.002868	1.002868	1.002868	
Fpwt = Fpt/Fwt			0.997417	0.997417	0.997417	
Vtp = Vo(Fwp)(Fpp)(Fpwt)			204,673 gal	271 gal	2,155 gal	

Combined Pipe						
Sum:	Vo	211,888.07 gal 27,121,673 oz.		Vtp1	212,683.72 gal 27,223,517 oz.	
						212,593.26 gal
						27,211,937 oz.

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## Pipe Segment Volume Allowance Calculations

Y	Pacific Gas and Electric Company	Job Number	414197334-TB1
Construction Co.	Snelson	Job Number	41474005-TB1
Hydro. Test Co.	Milbar hydro-test inc	Project No.	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096		
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C		WATER

General Pipe Data						
Description	Segment					
	1	2	3	4	5	6
Restrained or Unrestrained?	Unrestrained	Unrestrained	Restrained	Restrained	Restrained	Unrestrained
Outside Diameter	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.	34.000 in.
Wall Thickness	0.505 in.	0.375 in.	0.344 in.	0.375 in.	0.438 in.	0.500 in.
Inside Diameter	32.990 in.	33.250 in.	33.312 in.	33.250 in.	33.125 in.	33.000 in.
Spec./Grade	API5L-X60	API5L-X65	API5L-X52	API5L-X52	API5L-X48	API5L-X65
Length Unrestrained	26.00 ft	52.00 ft				40 ft
Length Restrained			4,510 ft	6 ft	48 ft	
Temperature -- On Test	83 °F	83 °F	82 °F	82 °F	82 °F	83 °F
Temperature -- End of Test	84 °F	84 °F	83 °F	83 °F	83 °F	84 °F
Pressure -- On Test	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig
Pressure -- End of Test	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig	1,008 psig

Unrestrained Pipe						
Sum:	Vo	5,277.31 gal 675,495 oz.		Vtp1	5,297.52 gal 678,082 oz.	
					Vtp2	5,296.69 gal 677,976 oz.
Vo Unrestrained	1,155 gal	2,346 gal				1,777 gal
Fwp 1	1.003089	1.003089				1.003089
Fpp 1	1.002744	1.003724				1.002772
Fpl 1	1.000419	1.000419				1.000419
Fwt 1	1.002868	1.002868				1.002868
Fpwt 1 = Fpl/Fwt	0.997557	0.997557				0.997557
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)	1,158.42 gal	2,355.79 gal				#####
Fwp 2	1.003089	1.003089				1.003089
Fpp 2	1.002744	1.003724				1.002772
Fpl 2	1.000437	1.000437				1.000437
Fwt 2	1.003044	1.003044				1.003044
Fpwt = Fpl/Fwt	0.997401	0.997401				0.997401
Vtp = Vo(Fwp)(Fpp)(Fpwt)	1,158.23 gal	2,355.43 gal				#####

Restrained Pipe						
Sum:	Vo	206,610.76 gal 26,446,177 oz.		Vtp1	207,367.80 gal 26,543,079 oz.	
					Vtp2	207,341.43 gal 26,539,703 oz.
Vo Restrained			204,191 gal	271 gal		2,149 gal
Fwp 1			1.003089	1.003089		1.003089
Fpp 1			1.003040	1.002790		1.002394
Fpl 1			1.000266	1.000266		1.000266
Fwt 1			1.002725	1.002725		1.002725
Fpwt 1 = Fpl/Fwt			0.997548	0.997548		0.997548
Vtp 1 = Vo(Fwp)(Fpp)(Fpwt)			204,941 gal	272 gal		2,155 gal
Fwp 2			1.003089	1.003089		1.003089
Fpp 2			1.003044	1.002794		1.002398
Fpl 2			1.000278	1.000278		1.000278
Fwt 2			1.002868	1.002868		1.002868
Fpwt = Fpl/Fwt			0.997417	0.997417		0.997417
Vtp = Vo(Fwp)(Fpp)(Fpwt)			204,915 gal	272 gal		2,155 gal

Combined Pipe						
Sum:	Vo	211,888.07 gal 27,121,673 oz.		Vtp1	212,665.32 gal 27,221,161 oz.	
					Vtp2	212,638.12 gal 27,217,679 oz.
1 °F Change	27.21 gal		3,482.49 oz.			

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# Hydrostatic Test Pipe Data Table

Pipe Type	Length	Restrained / Unrestrained	Outside Diameter	Wall Thickness	Specification & Grade	Pipe Yield Pressure	Material	Joint Type	Seam Ty
1	26 ft	Unrestrained	34.000 in.	0.5050 in.	API5L-X60	1,782 psig	Steel	Arc Weld	DSAW
2	52 ft	Unrestrained	34.000 in.	0.3750 in.	API5L-X65	1,434 psig	Steel	Arc Weld	DSAW
3	4,510 ft	Restrained	34.000 in.	0.3440 in.	API5L-X52	1,052 psig	Steel	Arc Weld	DSAW
4	6 ft	Restrained	34.000 in.	0.3750 in.	API5L-X52	1,147 psig	Steel	Arc Weld	DSAW
5	48 ft	Restrained	34.000 in.	0.4375 in.	API5L-X48	1,235 psig	Steel	Arc Weld	DSAW
6	40 ft	Unrestrained	34.000 in.	0.5000 in.	API5L-X65	1,912 psig	Steel	Arc Weld	DSAW

## Hydrostatic Test Project Owner & Participants

Owner Company	Pacific Gas and Electric Company	Job Number
Address	350 N. Wiget Walnut Creek, CA 94598 Attention: Redacted	414197334-T81
Construction Company	Snelson	Job Number
Address	601 West State Street Sedro-Wooley, WA 98284 Attention: Redacted	41474005-T81
Hydrostatic Test Co.	Milbar hydro-test inc	Project No.
Address	P O Box 7701 Shreveport, La. 71137-7701	FY12-112
Test Section	PG&E T-81 L-300B, MP 256.66 - 257.5096 From: 45+64 To: 0+00	
File Name	RCP 61362 - T-81, L-300B, MP 256.66 - 257.5096, A-C	

### Part II - Test Data (TO BE PREPARED BY PERSON SUPERVISING TEST AT TIME OF TEST)

Note: Minimum test pressure and duration are not to be charged without written approval.

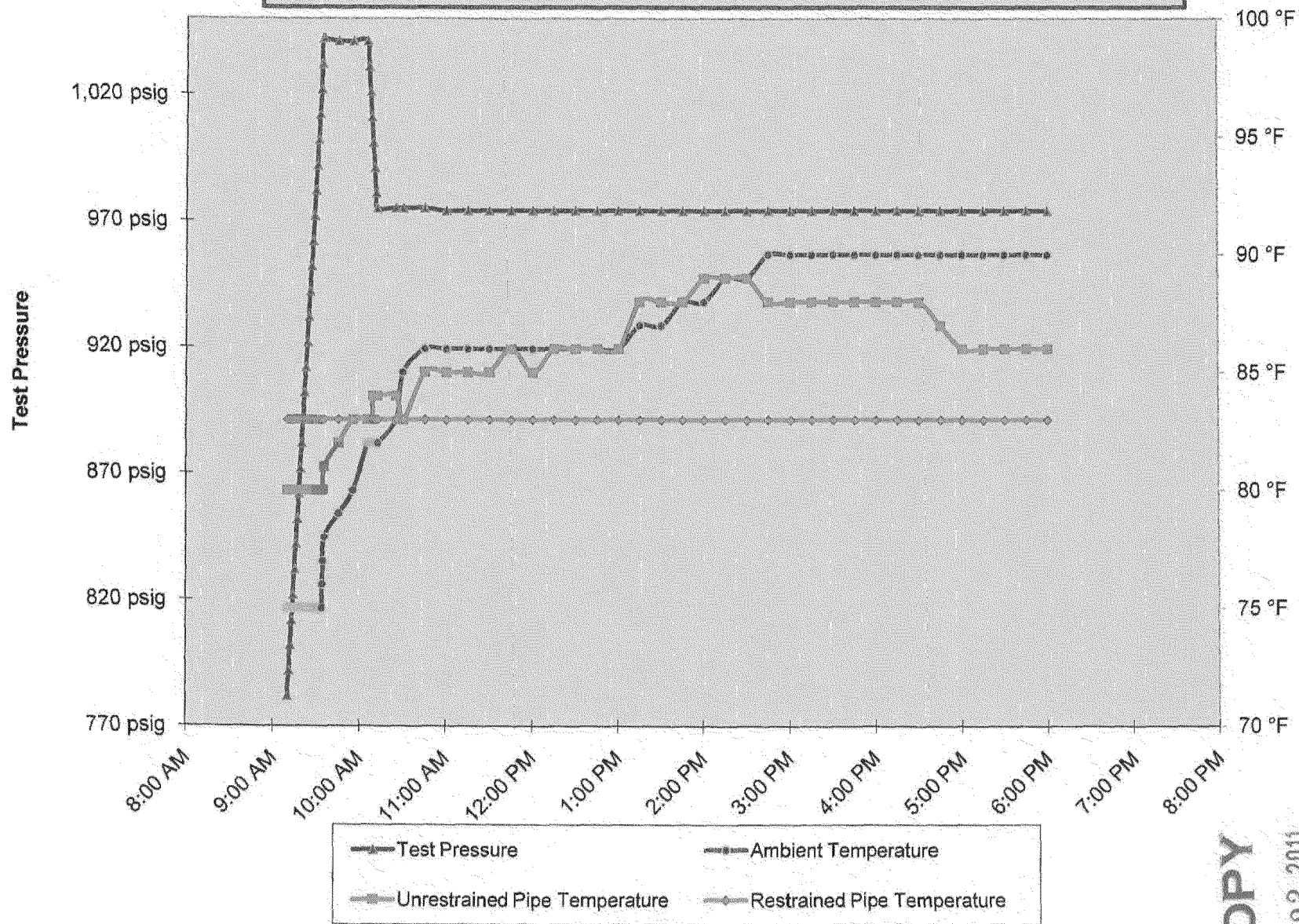
Time and Date Test Pressure Reached	8/22/11 9:35 AM	Elevation at Test Point	420 ft	Min. Required Test Press At Test Point (1)	959.13 psig	Max. Allowable Test Press at Test Point (4)	1,042.00 psig
Time and Date Test Ended	8/22/11 6:00 PM	Max. Elevation in Test Section	448 ft	Min. Indicated Test Pressure (2)	974.00 psig	Max. Indicated Test Pressure (5)	1,042.00 psig
Actual Duration of Test	8 hours 25 minutes	Min. Elevation in Test Section	420 ft	Min. Test Pressure at Max. Elevation (3)	961.87 psig	Max. Test Pressure at Min. Elevation (6)	1,042.00 psig

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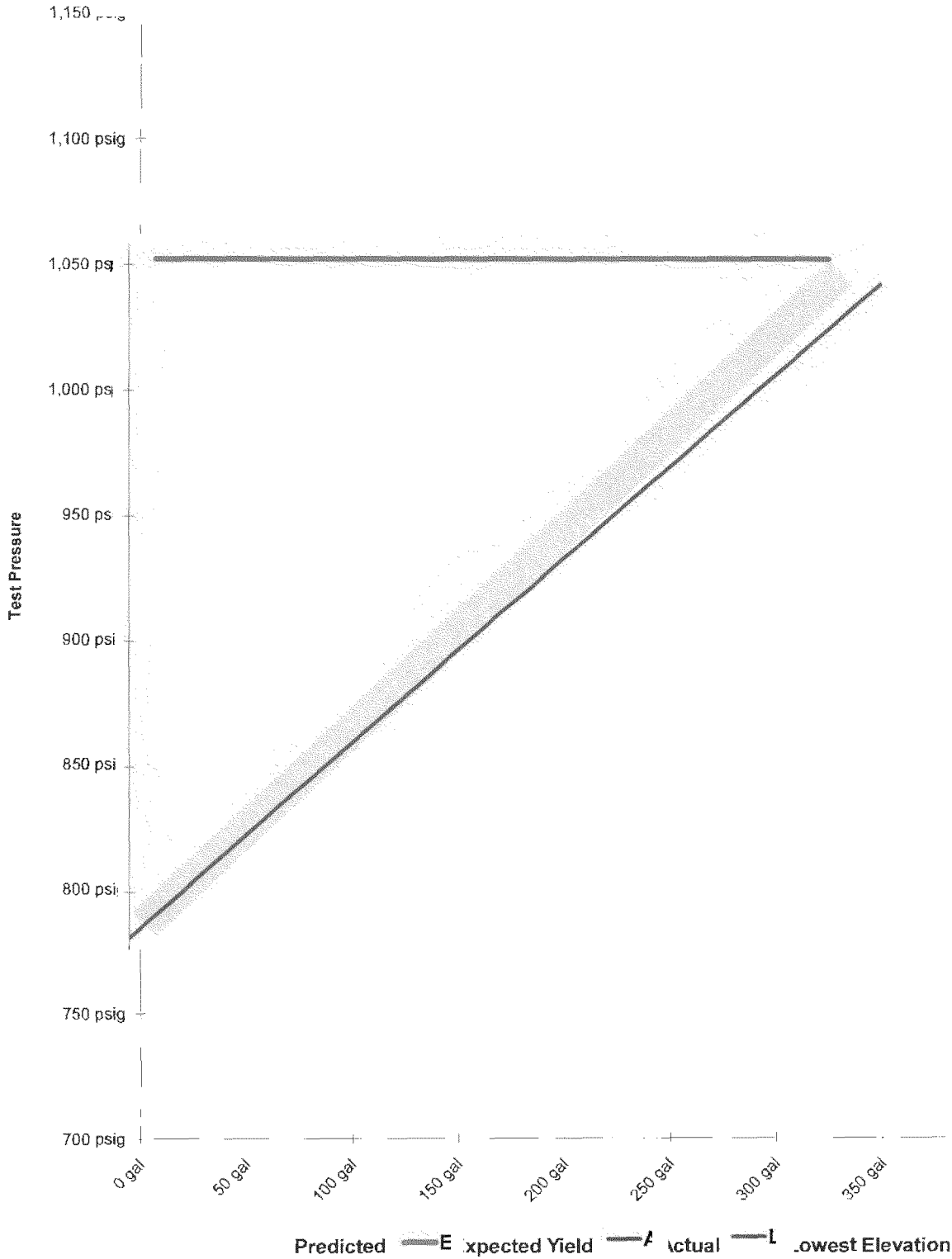
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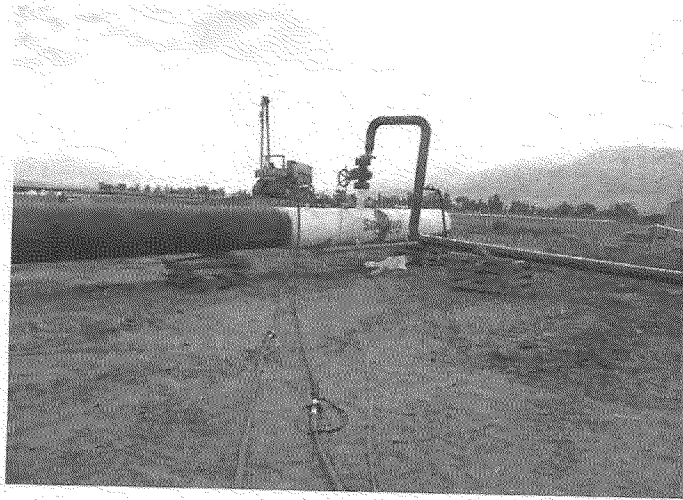


**Spike Pressure Test**  
**Stress Strain Curve -- PG&E T-81 L-300B, MP 256.66 - 257.5096**



Actual Pressure Volume Plot Data			Predicted Pressure Volume Plot Data	Slope		Spike Pressure Test Stress Strain Curve -- PG&E T-81 L-300B, MP 256.66 - 257.5096	
Pressure	Strokes	Gallons	Gallons	Actual	Predicted		
782 psig	0	0.00 gal		0	0.000	Pump gal per stroke	0.551 gal/stroke
792 psig	25	13.77 gal	12.75 gal	1.377	1.275	Pump Piston Diameter	3.000 in
802 psig	50	27.54 gal	25.51 gal	1.377	1.276	Pump Piston Stroke	6.00 in
812 psig	74	40.76 gal	38.27 gal	1.322	1.276	Pump Cylinders	3 ea
822 psig	99	54.53 gal	51.02 gal	1.377	1.276	Volume check gal per stroke	0.462 gal/stroke
832 psig	123	67.75 gal	63.78 gal	1.322	1.276	Volume Released (gallons)	11.50 gal
842 psig	148	81.52 gal	76.54 gal	1.377	1.276	Pressure Reduced (psi)	10 psi
852 psig	173	95.29 gal	89.30 gal	1.377	1.276	Maximum2	380 gal
862 psig	198	109.06 gal	102.06 gal	1.377	1.276	Minimum2	0 gal
872 psig	223	122.83 gal	114.82 gal	1.377	1.276	Maximum1	1,153 psig
882 psig	248	136.60 gal	127.59 gal	1.377	1.276	Minimum1	700 psig
892 psig	272	149.82 gal	140.35 gal	1.322	1.276	Gallons/Stroke Used	0.551 gal/stroke
902 psig	297	163.59 gal	153.11 gal	1.377	1.276	Predicted Gallons/Stroke	0.513 gal/stroke
912 psig	322	177.36 gal	165.88 gal	1.377	1.276	Pressure Increment	10 psi
922 psig	348	191.68 gal	178.64 gal	1.432	1.277	Max Pressure	1,042 psig
932 psig	372	204.90 gal	191.41 gal	1.322	1.277	Buried Pipe Temperature	83 °F
942 psig	398	219.22 gal	204.17 gal	1.432	1.277	Exposed Pipe Temperature	82 °F
952 psig	422	232.44 gal	216.94 gal	1.322	1.277	ASME B31.8 Appendix N-5	
962 psig	447	246.21 gal	229.71 gal	1.377	1.277		
972 psig	473	260.53 gal	242.48 gal	1.432	1.277	Average Actual Elastic Slope	1.371
982 psig	497	273.75 gal	255.25 gal	1.322	1.277	Average Predicted Elastic Slope	1.276
992 psig	522	287.52 gal	268.02 gal	1.377	1.277	Code Prescribed Minimum Yield Slope (less 10%) B31.8 N-5 (c)(2)	2.604
1,002 psig	547	301.29 gal	280.79 gal	1.377	1.277	Established Minimum Yield Pressure B31.8 N-5 (c)(2)	1,042 psig
1,012 psig	572	315.06 gal	293.56 gal	1.377	1.277	Maximum Allowed Volume (After Slope Deviation) B31.8 N-5 (c)(2)	418 gal
1,022 psig	597	328.83 gal	306.34 gal	1.377	1.277	Volume (After Slope Deviation) B31.8 N-5 (c)(2)	0 gal
1,032 psig	622	342.60 gal	319.11 gal	1.377	1.277	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Redacted</div> <div style="margin-left: 20px; text-align: right;"> <u>8-22-11</u> Date                 </div>	
1,042 psig	647	356.37 gal	331.88 gal	1.377	1.277		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		
1,042 psig		356.37 gal	331.88 gal	0.000	0.000		

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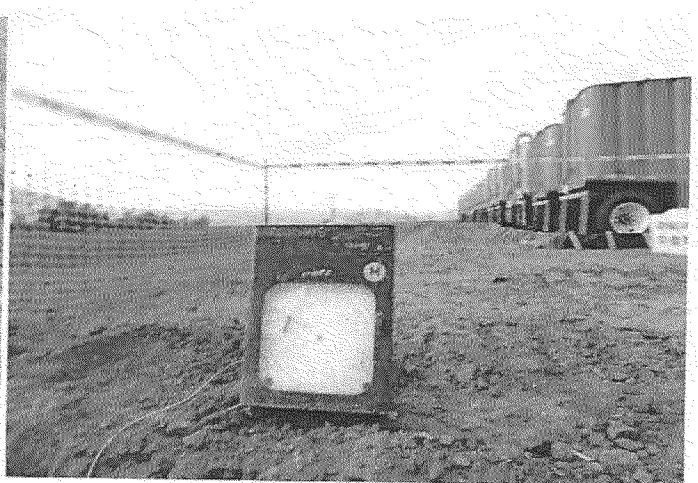
T-81 Test Head



T-81 Test Head



T-81 Alternate Rest. Temp. Rec.  
T-81 Unrestrained Temp. Rec.



T-81 Restrained Temp. Rec.

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